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Automatic and Semiautomatic Welding Under Flux

of the machine - 20-100 kg/hour weld metal. The ACY -2 (ASU-2) tractor type automatic machine can be used for electric arc welding under flux of angular and butt joints. Corner and Tee-shapes may be welded onto plane sheets, the minimum distance between the parts to be welded being 250 mm. Welding of butt joints is performed without a rail track, following a light indicator of the welding direction. Technical characteristics: up to 480 amp d.c., 380 v feed voltage; electrode wire diameter - 2 mm; welding speed 15-60 m/hour; electrode feed rate - 100-480 m/hour; weight - 30 kg. The equipment exhibited includes also the YCAMT - 100 (USAMI-100) automatic machine for welding thin metals, the ADC -1000-2 (ADS-1000-2) the TC-17M (IS-17M) machines, and welding machines with photoelectric servomechanisms. A system was developed for the ASC (ABS) machine consisting of 2 servomechanisms, i.e. a drive control of the vertical and horizontal displacement of the welding head. The system is intended for the automatic direction of the welding head along the butt and the automatic maintaining of the given operational length of the electrode when welding annular seams on petroleum or chemical equipment. The vertical motion of the machine is performed with the aid of a three-position relay tracker, and the horizontal motion by a ionic servo-drive. A photoelectric head, operating by the amplitude-phase method, is used as an indicator of deviations along both of coordinates. The photoelectric head is directed along the luminous line plotted on the work piece by an aluminum pencil with the Card 4/10

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aid of a special pattern. The error or tracking does not exceed 1-1.5 mm. The total power of the system is 0.6 kw. TSNIIIMASH developed designs of a welding tractor (Figure 6) and a welding head with servo-mechanisms, equipped with a photo-electric duplicating device  $\Phi K Y - 30$  (FKU-30), whose technical characteristics are: accuracy of directing the electrode when welding at a speed of 3 m/min and a deviation of the butt 100 mm/min, is about  $\pm 1$  mm. Possible limits of voltage fluctuations  $+ 5 - 10\%$  from the rated value; electric power - 2.5 kvamp; distance between the photo-electric head and the metal: 20-25 mm. Special equipment shown at the exhibition, includes: a A-643 automatic hose machine intended for welding tubes to boiler shell chambers, and a unit for the automatic welding under flux of 32-108 mm diameter tubes to boiler drums and shells of high and superhigh parameters; electrode wire diameter: 3-4 mm 220-650 amp current; 42-44 v arc voltage. A special installation is on view for welding reverse seams on longitudinal beams of railway cars, enabling one welder to control two welding machines; and an installation for the automatic welding of longitudinal seams on ridge beams of dump-cars. The A-564 welding pistol is intended for the welding-on under flux of pins in the lower position and in the lower, vertical and overhead position when using special flux rings; technical characteristics: diameter of pins - 4-12 mm; pin length 40-48 mm; d-c of reverse polarity; welding time: 0.3-1.2 sec; weight

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of the pistol, 2.2 kg. A buttonless pistol designed by G.S. Volkov for electric-arc butt welding of pins or similar parts to steel surfaces, is shown. It can be used for welding in all positions. Technical characteristics are: diameter of pins, 4-14 mm; pin length - 40-90 mm, welding time per pin - 2-4 sec; 14-30 kw d-c; weight - 2.5 kg. Ayna Saule, a welding operator from the Riga Wagon-building Plant, designed a pistol for welding on M8 and M10 pins to 2.5-4 mm thick sheet metal. A particular feature of the device is a special cam gear to break the pin off the sheet with simultaneous ignition of the arc. The УДССН-4 (UDSSH-4) installation can be used for semi-automatic welding under flux with protective rings or with an open arc, of metal pins and rods. Technical characteristics: pin diameter: 5-20 mm; pin length - 30 to 150 mm; welding current - 300-2,000 amp; welding time: 0.2-2 sec; efficiency: up to 100 welds per hour; weight of the pistol without the conductors: 2.6 kg. The ПЗ-2197 (PE-2197) riveting head can be used to join sheets with shaped rolled metal. Technical characteristics are: current feed voltage: 220/380 v; short-circuit current: 600-1,600 amp; electrode wire diameter: 4-8 mm; average consumption per one electric rivet: 1.7-2.5 g wire, 5.5-7.5 g flux; 0.012-0.034 kw/hour electric power; weight: (without flux and electrodes) 3.9 kg. Welding under flux is now being widely used in shipbuilding. A method of welding two-layer steel equipment has been developed,

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where automatic welding is not only applied to the carbon but also to the stainless steel layer, using a new mode of preparing the edges which eliminates the necessity of applying a separating weld. A technology is demonstrated for two-sided automatic electric arc welding of circular joints of parts and high-strength cast iron with low carbon steel parts. Welding is performed with d-c of reverse polarity, Sv-08A (Sv-08A) welding wire under AN-348 (AN-348) flux. Welding of tuyeres under AN-348A (AN-348A) flux with M1 wire on a A-409 apparatus, mounted on a lathe, was developed, eliminating preliminary heating of the parts. The technological processes demonstrated at the exhibition included aluminum welding with a split arc, automatic welding of metal plates with slight final shaping and other methods.

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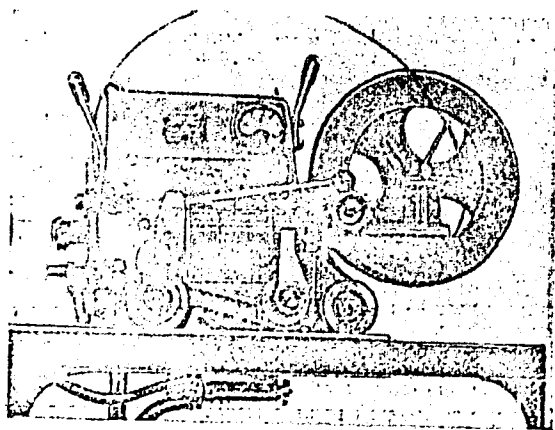


Figure 1. The TS-32 welding tractor.

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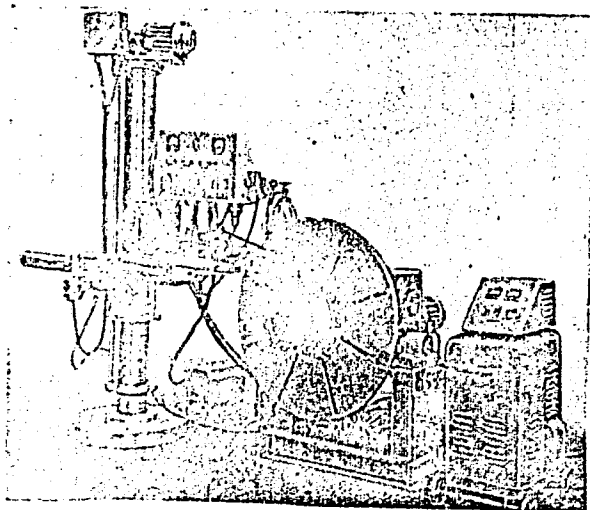


Figure 2.

The multi-purpose automatic USA-500 unit.

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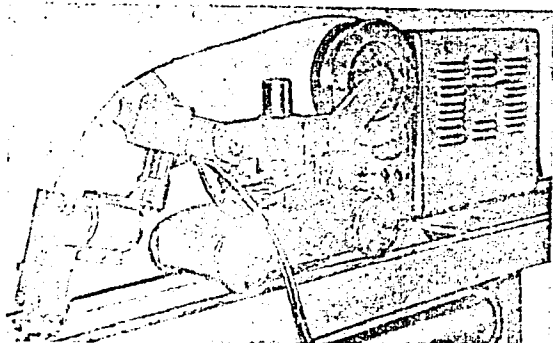


Figure 3.

The ADMT-300 automatic machine

There are 12 figures.

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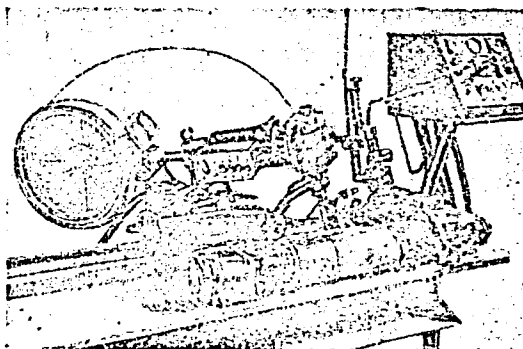


Figure 6.

The UT-1250-3 welding tractor with a  
photo-electric servomechanism.

KHANAPETOV, M. V.

Welding techniques at the Exhibition of Achievements of the National  
Economy of the U.S.S.R. Avtom. svar. 13 no.11:88-94 N '60.

(MIRA 13:11)

(Moscow--Exhibitions) (Welding--Exhibitions)



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S/135/61/000/001/002/018  
A006/A001

AUTHOR: Khanapetov, M.V., Engineer

TITLE: Mechanized Hardfacing Methods

PERIODICAL: Svarochnoye proizvodstvo, 1961, No. 1, pp. 6 - 10

TEXT: Information is given on a number of units for hardfacing operations shown in an exhibition on welding. In the section of submerged arc hardfacing the following units are exhibited: the VM (VM) type unit for submerged arc hardfacing of various parts, such as rotation parts, rollers, grooves and plane surface parts; the machine may also be used for flame and h.f. hardening operations and consists of a manipulator, a carriage, a tailstock, a stand, a frame, a A-384 building-up apparatus and a table. The technical characteristics are: maximum dimensions of hardfacing parts: 1,000 mm diameter, 3,000 mm length. The dimensions of flat parts to be hardfaced are up to 1,500 x 700 mm. The weight of the parts is 1 - 4 tons. Efficiency of building-up with one electrode is 3 - 12 kg/hr; with 3 electrodes: 5-20 kg/hr, with a strip - 5 to 20 kg/hr. Dimensions of the unit: 7,600 x 3,230 x 2,000 mm; weight 4,850 kg. The A-580 apparatus is intended for automatic submerged arc hardfacing of round parts. The technical characteristics are;

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maximum diameter of hardfaced parts - 650 mm; diameter of electrode wire - 1.6 - 2 mm; electrode feed rate 1.3 - 3.3 m/min; vertical set-up within 245 mm; welding current up to 400 amp; building-up speed 12 to 40 m/hr; dimensions of the machine 1,200 x 750 x 1,250 mm; weight 85 kg. The double-arc A-482 apparatus can be used for the hardfacing of wheel bandage crests of 760 - 2,000 mm in diameter; technical characteristics: welding current on the first arc : 180 - 200 amps; on the second arc: 280 to 300 amps; arc voltage 36 v; building up is made with a 1.6 - 2 mm diameter electrode wire (CG-10Г2 (Sv-10G2)) under fine granulated AN-348A (AN-348A) or OCU-45 (OSTs-45) flux. Electrode feed rate is 96-324 m/hr; building up speed is 19.5 - 35 m/hr. Hardness of the built-up metal is HR 240. A 0.2 - 1 mm thick and 10 - 100 mm wide strip is used for automatic submerged arc building-up of a metal layer of high corrosion, wear and erosion resistance. The method of automatic building-up with a strip electrode was developed by the Institut elektrosvariki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye. O. Paton). The welding unit is equipped with a special fixture for the strip feed. The technical characteristics are: minimum current density ensuring stable process 15 amp/mm<sup>2</sup> for low-carbon steel and malleable cast iron strip; it is 10 amp/mm<sup>2</sup> for stainless steel and copper strip. Optimum conditions when welding-on a 10-100 mm wide, 0.5-1 mm thick strip are: welding current 200 - 1,000 amps; arc voltage

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20 - 36 v; displacement speed of the device 4 - 12 m/hr; thickness of the layer built-up during one pass 2.5 - 8 mm; portion of base metal in the built-up metal 5 - 20%. The width of the built-up bead is about that of the strip. A high-efficiency process of semi-automatic building-up with a plate electrode is demonstrated as follows: the surface to be built-up is covered by a flux layer of about 5 mm height onto which a plate electrode is placed in such a manner that its coated side is underneath. Then the electrode is covered with a 10 - 15 mm thick flux layer and is clamped by a copper plate. The electric arc is excited and the welding process is conducted automatically without attendance by operators and moving building-up mechanisms. A method is shown of the manufacture of bimetallic parts by mechanized submerged electric arc building up of a bronze layer on steel surfaces. БРАЖМ-10-3-1.5 (BrAZhMts 10-3-1.5) wire of 6 and 8 mm in diameter or a БРАЖМ-9-2 (BrAMts 9-2) 1 mm thick, 50 - 100 mm wide strip is used. The A-384 apparatus is intended for the automatic submerged building-up with powder wire, conventional electrode wire or a strip, of rotary bodies, or for automatic submerged arc welding. The apparatus is fastened to a hardfacing stand. The electrode feed is constant and does not depend on arc voltage. Set up to a given speed or wire feed within 28.5 - 225 m/hr is made with the use of exchangeable gears; the transverse displacement of the head is performed by a suspension support. The

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nozzle can be inclined with the straightening mechanism and the wire drum to 30° on both sides. The apparatus is equipped with a flux bin. The YAH-1 (UANP) unit is used for the automatic submerged annular hardfacing of cylindrical parts of 35-300 mm in diameter and for the longitudinal hardfacing of slots at a speed of 10-25 m/hr. Automatic hardfacing of steel fixture parts is made on the A-1-500 (ADN-500) automatic machine with a 2X13 (2Kh13) alloyed wire under A-26 (AN-26) flux and A-4 ceramic flux. For the hardfacing of sealing surfaces of 40-150 mm in diameter using 5 mm diameter electrode wire, the following conditions are recommended: for closing valves: 300 - 380 amp d-c of reverse polarity; welding speed 20 - 25 m/hr; number of layers - 1; for rings, wedge-gate valves and closing valves: 350-600 amps current; welding speed 25 - 30 m/hr; number of layers - 2. A unit is exhibited for the hardfacing of pilger mill rolls, whose welding section consists of the A-384 device with a flux system and two inductors; rolls of 860 mm in diameter and up to 2,120 mm length can be hardfaced on this machine. The economical effect obtained as compared to chrome-molybdenum rolls is about 1.6 million rubles per year. Automatic hardfacing of pilgrim mill roll pads is made on a special stand equipped with a welding head, a manual vertical hoisting and transverse displacement mechanism. Hardfacing is made with CB-10ГC (Sv-10GS) 4 mm diameter wire under ПУ-6 (PTs-6) flux. Automatic building up of worn out

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80-ton trolley wheels is performed with the use of a АДС -1000 (ADS-1000) automatic machine which has been redesigned as follows: the crossarm was extended by 350 mm; the flux bin capacity was raised by 5 times and that of wire containers by 3 times. Welding conditions are: СБ -30ХГС (Sv-30KhGS) 4 mm diameter wire, ОЦУ -45 (OSTs-45) or ОЦУ -6 (FTs-6) flux; current intensity = 450 - 520 amps; voltage = 28 - 32 volts building-up pace = 7 - 9 mm/rev; circumferential speed = 30 m/hr; forward inclination angle of electrode = 8°; electrode displacement - 30 mm; hardness of the built-up wheels is HB 240 - 260. The multi-electrode УНУУ -МА -7 (TsNII-MA-7) automatic machine is intended for the building-up of bandages without rolling out the wheel pair. A unit for submerged automatic hardfacing of press tools consists of a standard welding equipment and a multi-purpose manipulator with a separate drive permitting the fastening of parts. The technology developed assures high-quality hardfacing of press-disks made of 3Х2В8 (3Kh2V8) and 4ХНВ (4KhNV) steel, using ПП -3Х2В8 (PP-3Kh2V8) and ПП -4ХНВ (PP-4KhNV) electrode wire and АН -20 (AN-20) flux. Building-up conditions are: 240 - 260 amps current (at a 170 mm diameter of the parts); 350-400 amps (at 350-400 mm diameters); 26 - 32 v arc voltage; welding speed = 20 - 42 m/hr; operational space of electrode: 30 - 40 mm; electrode displacement from the vertex: 8 - 12 mm; building-up pace: 3 - 6 mm; d-c of reverse polarity. At the section

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of vibration-resistance building-up a number of exhibits is displayed. The VАНЖ-6 (UANZh-6) machine is used for the repair of tractor parts; the diameter of parts to be built-up is 15-300 mm for external surfaces; 50-250 mm for internal surfaces; the built-up layer is 0.2 - 4 mm thick; building-up speed is 0.3 - 2.5 m/min; electrode wire diameter is 1.1 - 1.9 mm; electrode oscillation frequency - 100 osc/sec; the electrode vibrates from an electro-magnetic vibrator. The АНЖ-1 (АНЖ-1) type head is intended for automatic submerged vibration-resistance building-up with an oscillating electrode, of shafts, slot connections and planes by applying 0.5 - 3 mm thick metal layers. The КУМА-5М (KUMA-5M) automatic machine is intended for vibration-projection building-up of 0.5 - 3 mm thick metal layers in one pass, and for welding thin-walled parts of 0.5 mm thickness and more, in various media. The design of the machine is based on a new principle of performing circular movements of the electrode tip at a fixed nozzle; a dynamical regulator of electrode feed rate is used. The machine can be used to build up external cylindrical and shaped surfaces of over 20 mm in diameter. The electrode feed rate is 0.4 - 1.6 m/min. The machine is mounted on a lathe support with a center height of 200 mm and more, the longitudinal feed is 1.5 - 5 mm per one revolution of the spindle. A water pump is mounted on the stand supplying up to 3 liters cooling liquid per minute. The dimensions of the machine are 350x150x450 mm. The weight

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is 27.8 kg. The БГ-4 (VG-4) head was developed for the automatic vibration-resistance hardfacing of carbon and high-alloy steels in shielding gas; the head consists of feed, vibration and electrode adjustment mechanism. There is a special vibration mechanism: when switching on the motor, an eccentrically located bearing forces the electrode to carry out transverse oscillations in its middle section. The wire end oscillates at a frequency of 47.5 periods per second, preventing shaking of the head and ensuring the high constancy of the set-up and a stable building-up process at extended continuous operation periods. The head produces high-quality building-up in carbon dioxide of carbon, high-alloy, stainless and high-speed cutting steels. Some other hardfacing methods are also demonstrated, such as hardfacing in carbon dioxide of the internal surfaces of over 150 mm diameter press bushings not over 1 m length, for hot pressing of metals from 4XHB (4KHN) steel. There is an electric driven electrode feed, and rotation mechanism. Building-up on the internal surface of the bushing is made along a helical line due to the rotary motion of the bushing and the straight-lined displacement of the welding head. Building-up conditions are: 200 - 300 amps d-c of reverse polarity; 20 - 36 v arc voltage; 20 - 35 m/hr welding speed; gas consumption - 500 to 600 liter/hr; electrode displacement from the vertex - 20 - 30 mm; building-up pace 5 - 7 mm; preliminary heating of the bushing: 300-500°C. Welded crusher bushings

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are made by building-up a babbitt layer using a ГС-53 (GS-53) burner and a gas-oxygen flame; a Б16 (B16) babbitt rod is built-up to 5 - 6 mm thickness onto a preliminary tinned surface; the use of babbitt built-up bushings replacing bronze bushings, yields savings of 12,000 rubles per one КДМ-2200 (KDM-2200) crushing machine. Automatic building up with a powder wire is used for the repair of rolls, without special materials to shield the arc. Building-up is made with the АДС-1000 (ADS-1000) machine welding head under the following conditions: 400 amps current; 25 - 26 v arc voltage; 40 m/hr welding speed; the powder wire is composed of 4% ferromanganese; 20% ferrosilicon; 3% graphite; 7% aluminum powder; 5% ferrochrome; 5% ferrovanadium; 14% ferrotungsten; 10% ferrotitanium; 32% iron powder. The strength of the built-up rolls exceeds that of "50" grade steel rollers by more than twice. The economical effect is about 150,000 rubles per year. There are 9 figures and 1 table.

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AUTHOR: Khanapetov, M. V., Engineer

TITLE: Results of Activities of the Thematic Exhibition "Using Progressive Welding Technique in the National Economy of the USSR"

PERIODICAL: Svarochnoye proizvodstvo, 1961, No. 3, p 43

TEXT: The author enumerates the following welding equipment shown in a thematic exhibition marked with the ВДНХ СССР (VDNKh USSR) diploma and recommended for industrial use: the АСГ-2 (ASG-2) and ГСС-1 (GSS-1) machines with a system for the automatic tracking of butt welds and a constant arc length; the A-638 unit developed by the Institute of Electric Welding imeni Ye. O. Paton for automatic argon-arc welding with non-consumable electrode in a horizontal plane; NIAT pipe-welding automatic machines; ГРАД-200 (GRAD-200) and ГРАД-400 (GRAD-400) burners for argon-arc welding, which are by 1.5 - 2 times lighter than the existing devices; APK (ARK) devices from NIAT of the radial-console type; the ИО 20.020 (IO20.020) unit from the State Committee of Radio-Electronics for argon-arc welding and machines from NIAT for welding in controlled atmosphere. The following machines were recommended for new welding methods: machines for

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electron-beam welding and for the welding of thin sheet materials with a pulse arc shown by NIAT the MCXC-5 (MSKhS-5) and the MCXC-35 (MSKhS-35) machines for cold butt welding; the MCT-32 (MST-32) and MCT-35 (MST-35) machines for friction welding and a device for ultrasonic brazing exhibited by VNIIESO; NIAT machines for welding of polymer materials; VDNKh USSR medals were delivered to the Institute of Electric Welding imeni Ye. O. Paton for an apparatus for welding with a compressed high-temperature arc; to NIAT for the Y3TSh-1 (UZTSh-1) and the Y3T-1 (UZP-1) machines for ultrasonic spot and spot-seam welding of parts of stainless steel, aluminum, copper, their alloys and plastics; to the enterprises of the State Committee of Radio-Electronics for an assembly-welding table MO 20.019 (IO20.019) for ultrasonic welding; to MVTU imeni Bauman and MEI for the PUT-5 (PUT-5) machine for the ultrasonic welding of plastics and polymers; to the imeni 15-letiya LKSMU Plant for a machine intended for welding in water vapor; to the Izhorsk Plant imeni Zhdanov for the development of new holders and the introduction of cinderless welding etc. Power supply sources and rectifiers for 40 to 1,000 amps currents designed by NIAT, VNIIESO and TsNILElektrom were awarded and recommended. New transformer types recommended include: the TCF-500

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(PSG-500) for automatic welding in shielding gases, the ПСУ-500 (PSU-500) for the power supply of machines for submerged and shielded arc welding. The apparatus recommended for welding-current control are: the УАР-2 (UDR-2) for remote control of the welding current from VNIIESO on transformers ПС-300 (PS-300); ПСО-300 (PSO-300), ПС-500 (PS-500), the units АС (AS), Б-300 (B-300), АСД-300 (ASD-300) and the remote current control machine designed by engineer V. N. Kulikov. Welding materials recommended include a great number of electrodes and electrode wires such as УЛ-20 (TsL-20), УЛ-27 (TsL-27), УЛ-26М (TsL-26M), УЛ-32 (TsL-32), УТ-10 (TsT-10), УТ-15 (TsT-15), УТ-16 (TsT-16) from TsNIIMASH; КТИ-9 (KTI-9), КТИ-10 (KTI-10), КТИ-7 (KTI-7), КТИ-5 (KTI-5), А-400/10 (A-400/10), NIAT-3, of the Experimental Welding Plant, intended for the welding of steels operating at 500 - 650°C. УЧ-4 (TsCh-4) steel electrodes from TsNIIMASH for the cold welding of cast iron, replacing analogous copper and nickel alloy-base electrodes assuring high quality of weld joints and possibility of mechanical working; building-up electrodes ОЗН-250 (OZN-250), ОЗН-350 (OZN-350), Т-590 (TS90), Т-620 (T-620) from the Experimental Welding Plant; УН-4 (TsN-4), УН-5 (TsN-5) and УТ-1 (TsT-1) from TsNIIMASH for the building up of worn-out surfaces of mining

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equipment, excavators, press-forging dies etc; electrode wires produced at TsNIIMASH for welding in carbon dioxide, and a number of other welding materials. TsCh-4 electrodes were awarded with a gold medal, silver and bronze medals were delivered to electrodes for welding and hardfacing of austenitic and perlitic heat-resistant steels and new ceramic oxygenless fluxes of the ФЦК (FTsK) type from TsNIIMASH; electrodes for welding and hardfacing aluminum and aluminum cast alloys and equipment for the manufacture of electrodes, from the Mosgorsovnarkhoz Experimental Welding Plant. Bonuses were issued to about 20 enterprises for the introduction of progressive welding technique into the industry, including the Novo-Kramatorskiy Machinebuilding Plant, Uralmashzavod, the Mogilev Plant of Hoisting and Transportation Machine Building; the Podol'sk Machinebuilding Plant imeni Ordzhonikidze etc. Some exhibits had been awarded with prizes the year before, including burners for plasma cutting of the Institute of Metallurgy imeni A. A. Baykov, AS USSR; machines for ultrasonic welding of the same Institute and of the Scientific-Research Technological Institute; the ПС-7 (PS-7) device for cold welding of the Scientific Research Institute of the Cable Industry;

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AUTHOR: Khanapetov, M. V.

TITLE: New welding equipment

PERIODICAL: Mashinostroitel', no. 4, 1962, 39 - 41

TEXT: The author describes a number of new welding installations exhibited at the VDNKh. 1) At the Electric Welding Institute im. Ye. O. Paton a new specialized installation for the electron-beam welding in vacuum of large-size components has been developed. It is intended for welding longitudinal and annular seams on components up to 1,000 mm length, 700 mm in diameter and with a metal thickness of 4 - 5 mm, made of easily oxidizable metals like molybdenum, zirconium, tantalum, vanadium, etc. 2) A new welding method, i.e. radio-frequency resistance welding, has been developed by a team of NIITVCh im. Prof. V. P. Volodgin and the Moscow Tube Plant. A vacuum-tube oscillator of 60 - 200 kw with a current frequency of 70 - 450 kc is used. Sheet material with edges from 0.1 to 10 mm can be welded. The new method is to replace the inefficient argon arc welding. With a 60 kw power oscillator, the r-f welding speed amounts to 20 -

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New welding equipment

60 m/min. 3) The АСГ-4 (ASG-4) assembly is a specialized installation for the automatic argon-shielded arc welding of Al-alloy components with tungsten electrodes. The arc length and direction of electrode travel in the joint plane of the parts to be welded are controlled automatically; the overlapping of annular seams and the filling of craters is program-controlled. The maximum welding alternating current is 500 amp, the welding wire diameter 1.5 - 2.6 mm. The accuracy of maintaining the given arc length is 0.25 v. 4) The type ПДА-180-2 (PDA-180-2) semi-automatic welder is intended for the argon-shielded arc welding with consumable electrodes of aluminum or Al-alloy parts. The assembly consists of a welding gun, control cabinet and welding converter. The current is supplied from the 220/380 v mains. The rated welding current is 180 amp. The electrode wire of 1 - 1.2 mm diameter is fed at a rate of 3 - 12 m/min. The PDA-180-2 welder has been developed by the Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvaralnogo oborudovaniya (All-Union Scientific Research Institute of Electric Welding Equipment). 5) The Volgograd VNIITMASH has developed and put into production the ПТПГ -1 (PTPG-1) semi-automatic welder for the CO<sub>2</sub>-shielded gas-electric welding with consumable electrodes of large-size components of small thickness from low-carbon and alloyed steels. The 0.8 - 1.0 mm diameter electrode wire is fed at a rate of 160 - 700 m/hour. The maximum welding direct cur-

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maximum thickness of parts to be welded is 2 mm, the maximum capacity is 250 spots/minute. The rated machine power is 50 kVa. 9) The traveling rectifier attachment for welding transformers consists of the silicon-diode rectifier, arranged in a bridge circuit, electrolytic capacitor used to take down the self-induction overvoltage and the filter choke. The rectifier is calculated for a rated current of 600 amp, so that it can be attached to welding transformers up to 1,000 amp. There are 4 figures. /

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A006/A106

AUTHOR: Khanapetov, M. V., Engineer

TITLE: New welding equipment at the USSR National Economy Achievement Exhibition

PERIODICAL: Svarochnoye proizvodstvo, no. 6, 1962, 32-35

TEXT: The following equipment is listed: Multi-purpose welding torch YHT-1 (UPG-1) for welding and cutting metals, alloys and non-metallic materials; arc-welding head IMET-106A (IMET-106A) for manual and automatic cutting aluminum and its alloys, stainless steel, and other metals and non-electro-conductive materials; ultrasonic welding apparatus Y3CA-5 (UZSA-5) for spot-welding thin-sheet material; the Y3CP-1 (UZSP-1) unit for ultrasonic welding plastic materials; ultrasonic unit YП-43 (UP-43) for tinning ferrites and ceramics with soft solders without the use of fluxes; ultrasonic bath BMJ-1 (VML-1) for the fluxless tinning of small aluminum, copper, brass and bronze parts and of enameled conductors; the pneumo-hydraulic machine MXCA-50-2 (MKhSA-50-2) for the reinforcement of aluminum coil leads, bars and cable caps with copper plate; ultrasonic oscillation generators Y3Г-2.5 (UZG-2.5) and

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S/135/62/000/006/011/014  
A006/A106

New welding equipment at the USSR ...

Y3Г-5 (UZG-5) for welding units; the one-position welding unit CAM-300 (SAM-300) for d-c feeding of the welding arc in manual welding; a roller machine for producing hermetic joints of semiconductor device housings; welding head БГ-5 (VG-5) for automatic vibration-arc building-up. The weld joint control equipment exhibited includes: an X-ray unit for the mechanized visual examination of weld joints with the aid of an electron-optical transformer; X-ray units PYP-200-5-1 (RUP-200-5-1) and PYP-120-5-1 (RUP-120-5-1) for material control in laboratories, shops, building sites and for pipeline control in the field, operating at temperatures ranging from -10 to +35°C and up to 80% relative humidity; YЗД-НИИМ-5 (UZD-NIIM-5)-type flaw detectors for revealing internal defects and their location in metal articles and in welded and riveted joints without special machining of the rolled surface; the ЧИКП-2 (ChIKP-2) vibration flaw detector for determining lamination, porosity and similar defects in glued joints. There are 7 figures.

Card 2/2

KAMINSKIY, M.L., inzh.; KHANAPETOV, M.V., inzh.

Arc welding of dowels. Mont. i spets. rab. v stroi. 24 no.8:  
13-17 Ag '62. (MIRA 15:8)

1. Ministerstvo stroitel'stva RSFSR.  
(Dowels--Welding)

KHANAPETOV, M.V., inzh.

Congress of welders. Mont.i spets.rab. v stroi. 24 no.12:28 D  
'62. (MIRA 15:12)

(Welding--Congresses)



KHANAPETOV, Mikhail Vasil'yevich; FOIMINYKH, Vitaliy Profir'yevich;  
TSAGEL'SKIY, Vladimir Leopoldovich, nauchn. red.;  
ZHURAVLEV, B.A., red.

[Electric welder for responsible welding operations] Elek-  
trosvarshchik otvetstvennykh svarochnykh rabot. Moskva,  
Stroizdat, 1964. 262 p. (MIRA 17:12)

KHANAPETOV, M.V., inzh.; PROKOP'YEV, V.I., inzh.

News. Mont. i spets. rab. v stroi. 26 no.8:30-32 Ag '64.  
(MIRA 17:11)

KHANASHVILI, M.M.

On spatial analysis of conditioned sound stimuli and on experimental neurosis caused by the spatial approximation of the sources of sound stimulation. Zhur. vys. nerv. delat. 14 no.2:270-276 Mr-Ap '64. (MIRA 17:6)

1. Pavlov Physiology Department, Institute of Experimental Medicine, U.S.S.R. Academy of Medical Sciences, Leningrad.

*KHANAICHENKO, N. K.*

KHANAICHENKO, N. K.

Sluchai iskusstvenno vyzvannogo grozovogo razraida v zimni period.  
(Meteorologiya i gidrologiya, 1946, no. 4, p. 61)

Title tr.: An artificially induced wintertime bolt of lightning  
(into an aerostat).

QC851.M27

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of  
Congress, 1955.

KHACHIKYAN, N. K.

"Aspects Presented in the Transformation of Water Masses," No 1, pp 42-46.  
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

IVANOV, G.S.; KHANAYCHENKO, N.K.

Telemeter hydrometeorological station (SDS) on ships.  
Meteor. i gidrol. no.3:48-50 Mr '56. (MLRA 9:7)  
(Meteorology, Maritime) (Meteorological stations)  
(Telemetering)

MAHAYCHENKO, N.K.

Probability in determining the average temperature of water during  
the flow period according to single observations at sea. Trudy  
GOIN no.40:91-97 '57. (MIRA 10:7)  
(Ocean temperature)

KHANAYCHENKO, N.K.

Cause of variations in the level of the world ocean. Okeanologia  
2 no.4 599-601 '62. (MIRA 15:7)

1. Kaliningradskoye otdeleniye Morskogo gidrofizicheskogo instituta  
AN SSSR.

(Ocean)



KHANAYCHENKO, N.K.; KHLYSTOV, N.Z.; ZHIDKOV, V.G.

System of equatorial countercurrents of the Atlantic Ocean.  
Okeanologiya 5 no.2:222-229 '65. (MIRA 18:6)

1. Morskoy gidrofizicheskiy institut AN UkrSSR.

KHANAYCHENKO, H.K.; KILYSTOV, H Z.

Southern branch of the equatorial countercurrent in the Atlantic Ocean. Dokl. AN SSSR 166 no.3:709-712 Ja '66.

1. Morskoy gidrofizicheskiy institut AN UkrSSR. Submitted (MIRA 19:1)  
May 26, 1965.

ACC NR: AT6032069

(N)

SOURCE CODE: UR/3095/66/034/000/0154/0164

AUTHOR: Khanaychenko, N. K.

ORG: none

TITLE: Some traits of circulation of water in the troposphere of the tropical zone of the Atlantic Ocean

SOURCE: AN UkrSSR. Morskoy gidrofizicheskiy institut. Trudy, v. 34, 1966. Tekheniye Lomonosova (Lomonosov Current), 154-164

TOPIC TAGS: ocean current, sea water, water vapor, ocean dynamics, oceanographic expedition / ATLANTIC OCEAN, LOMONOSOV CURRENT

ABSTRACT: The currents in the equatorial region of the Atlantic Ocean, and particularly the Lomonosov Current, were studied and the results are reported. Regions of high salinities, with values greater than 37.25‰, are located to the north and south of the equator in the regions of anticyclones, where water is subjected to prolonged evaporation. This water moves to the west equatorial region, where, coming under the influence of the trade winds, it is speeded up and overlain by a layer of low-salinity water. Water from the North Atlantic anticyclone region moves to the west as the Antilles Current, which forms two branches: the left branch swings toward the equator while the right branch moves westward to form the north branch of the Caribbean

Card 1/3

ACC NR: AT6032069

"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000721720020-0"

Currents from the Caribbean Current and Antilles Current forms the warm, saline Gulf Stream. Surface waters at the shores of Africa are driven away toward the west by trade winds, necessitating inflow of water to balance outflow. This inflow comes from upwelling, from the Canary Current, and from advection to the east of water of anticyclone region origin. This saline and dense water moves east under the surface, in a layer 400-500 m thick, as the high-speed Lomonosov Current. Calculations of transport can be made from speed and direction measurements. From the South Atlantic anticyclone region, water of increased salinity moves north as the Guiana Current. At 7° S, on the shores of Brazil, the transport is  $33 \cdot 10^6 \text{ m}^3/\text{sec}$ . The water gradually sinks below the surface and forms, with northern water, the Caribbean Current. At 45° W the transport is  $26 \cdot 10^6 \text{ m}^3/\text{sec}$ ; the decrease of  $7 \cdot 10^6 \text{ m}^3/\text{sec}$  can be attributed to an eastward branch at 4° S. This branch forms part of the south branch of the equatorial countercurrent, with a transport of  $20 \cdot 10^6 \text{ m}^3/\text{sec}$  at 33° W. At 2-5° N, 45° W, water of the North Atlantic anticyclone region origin is found moving eastward under a thin layer of westward-moving trade currents. The transport of this powerful current is  $54 \cdot 10^6 \text{ m}^3/\text{sec}$ . From it, one branch continues east as the inter-trade wind equatorial countercurrent with a transport of  $15 \cdot 10^6 \text{ m}^3/\text{sec}$ ; the other branch moves southeast, reaches the equator, and forms the Lomonosov Current with a transport of  $39 \cdot 10^6 \text{ m}^3/\text{sec}$ . This current may be traced east to Guiana Bay, where the transport is  $37 \cdot 10^6 \text{ m}^3/\text{sec}$ . At the northeast shore of South America, currents from the north and south form a field of deformation. In this region, there is an increase in tension, causing an increase in acceleration to the

Card 2/3

3,1710 (1041,1126,1127)  
9,4230

21184  
S/141/60/003/006/003/025  
E133/E361

AUTHORS: Khanberdiyev, A. and Kaydanovskiy, N.L.

TITLE: The Travelling-wave Tube as a Phase-modulator for  
Radio-interferometers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,  
Radiofizika, 1960, Vol. 3, No. 6, pp. 943 - 948

TEXT: The tube is to be used in the centimetre or decimetre range. The phase change produced depends mainly on the electrode potentials and the focusing field, with a change of grid voltage producing the most effect. If the optimum voltage of the latter ( $U_0$ ) is changed by 1%, the phase change is 40-55%. For changes in  $U_0$  (the synchronising voltage)  $> 2\%$ , the corresponding phase change does not increase linearly. To obtain 100% modulation, one can have a constant phase change of  $90^\circ$  together with a supplementary change of  $\pm 90^\circ$  between the two interferometer arms. A block diagram of the interferometer is given. Either one or two travelling-wave tubes can be used. The block diagram is given of an experimental  
Card 1/4

21164

The Travelling-wave Tube ....

S/141/60/003/006/003/025  
E133/E361

set-up (phase-modulator) which was tested in the laboratory. The dependence of the low-frequency amplifier output of this phase-modulator on the modulating voltage is shown in Fig. 4. A travelling-wave tube can also be used as an amplitude-modulator in a single-antenna radio telescope but it is less effective in this case. Phase-modulation produces amplitude-modulation of the internal noise of the tube. In most tubes the minimum noise factor occurs slightly below the synchronising voltage. Fig. 6 shows the variation of amplification coefficient with grid voltage. This curve, and the corresponding one for the noise factor, are almost symmetrical about the synchronising voltage  $U_0$ . The dependence of amplitude-modulation on the frequency of the modulating voltage and its harmonics has been investigated experimentally. The following values were obtained for the power of the parasitic amplitude-modulation harmonics (in % of the total power): 2, 91, 0 and 7 for the fundamental wave, second, third and fourth harmonics, respectively. Thus, if a narrow-band filter

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The Travelling-wave Tube ....

S/141/60/003/006/003/023  
E133/E361

centred on the modulation frequency is used, only 2% of the modulation noise will be passed. This refers to the case where only one tube is used; if two tubes with modulation of opposite phases are employed, the parasitic effects can be lowered by an order of magnitude. The advantages of these tubes are: 1) when the tube is used as a low-frequency amplifier, there is no need for a special modulator; 2) the range of possible modulation frequencies is increased by many tens of megacycles. Acknowledgments are expressed to S.E. Khaykin for valuable advice and to A.A. Novysh for participation in the work. There are 7 figures, 1 table and 7 references: 1 Soviet and 6 non-Soviet.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya  
AN SSSR (Main Astronomical Observatory of the  
AS USSR)

SUBMITTED: July 1, 1960

Card 3/4

ACCESSION NR: AR4028230

S/0274/64/000/002/B099/B099

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 2B627

AUTHOR: Khanberdiyev, A.

TITLE: Phase modulators for light waves

CITED SOURCE: Izv. AN TurkmSSR. Ser. fiz.-tekhn., khim. i geol.  
n., no. 4, 1963, 117-119

TOPIC TAGS: phase modulator, electrically controlled phase modulator, electron optical phase modulator, Kerr effect, nitrobenzene, ammonium phosphate, electromechanical modulator

TRANSLATION: A description is presented of electrically controlled phase modulators, the use of which is preferable to that of mechanical phase modulators. The first type is an electron-optical phase modulator, constructed on the basis of the Kerr effect in nitroben-

Card 1/2

ACCESSION NR: AR4028230

zene and ammonium phosphate crystals. Owing to the possibility of working at sufficiently high frequencies and in a broad modulation-frequency range, this type of modulator can be used for communication at optical frequencies. Electromechanical modulators employ the piezoelectric effect in crystals and have low intensity of the modulating electric field and with high frequency stability. The modulators modulate waves of arbitrary polarization, and can be used in spectroscopy and interferometry of stars. A. K.

DATE ACQ: 30Mar64

SUB CODE: GE, SD

ENCL: 00

Card 2/2



KHANBERDIYEV, A.

Compound radio interferometer with a base of  $2500\lambda$  for the 9 cm.  
wave length. Izv. GAO 23 no.3:149-154 '64.

(MIRA 17:11)

PUCHKOV, A.A.; KHANBERG, V.A.; SHKATOV, Ye.F.

Signum transducer with the EPP-109 amplifier. Priborostroenie  
no.10:26 0 '64. (MIRA 17:11)

KULAKOV, M.V.; SHKATOV, Ye.F.; PUCHKOV, A.A.; KHANBERG, V.A.

Computer for processing the differential chromatograms of  
C<sub>1</sub>--C<sub>5</sub> fractions. Mash. i nef. obor. no.9:30-31 '64.

(MIRA 17:11)

1. Moskovskiy institut khimicheskogo mashinostroyeniya, Yaroslavskiy  
nauchno-issledovatel'skiy institut manometrov i Yaroslavskiy tekhn-  
logicheskoy institut.

SUBJECT: USSR/Trade schools

27-4-16/19

AUTHOR: A. Khanchin

TITLE: Meeting a Hero of the Soviet Union (Vstrecha s geroyem sovetskogo soyuza)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, April 1957, # 4 (143), p 32 (USSR)

ABSTRACT: The students of the Syzran' Trade School Nr. 10 arranged a visit of Vasilii Nikolayevich Fedotov, a Hero of the Soviet Union who related about his war experiences and the bravery and steadiness of the young Soviet soldiers. He appealed to the students to learn diligently, be disciplined and to be proficient in their profession.

There is 1 photo.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress  
Card 1/1

KHANCHIN, A., rabotnik

Competition between two cities on the Volga. Zhil.-kom. khoz. 9 no.1:  
5-6 '59. (MIRA 12:3)

1. Gorodskaya spravoch'naya kontora, g. Kuybyshev.  
(Kuybyshev--Apartment houses--Maintenance and repair)  
(Saratov--Apartment houses--Maintenance and repair)

OKUNEV, V.; ISAKOV, Yu.; KAPSUDIN, S., vospitatel'; KHANCHIN, A.

News from schools. Prof.-tekh. obr. 17 no.9:32, 3 of cover 8 '60.  
(MIRA 13:10)

1. Zamestitel' direktora zheleznodorozhnogo uchilishcha No.2 (for Okunev). 2. Izmoshchnik direktora po kul'turno-vospitatel'noy rabote Poligraficheskogo remeslennogo uchilishcha No.2 g.Tashkenta (for Isakov).

(Vocational education)

(Kuybyshev--Sports)

MAKARIN, S.N.; KHANCHIN, V.K.

Pneumatic tube transportation of wood wastes without the use of a  
cyclone. Der. prom. 8 no.10:24 0 '59. (MIRA 12:12)  
(Pneumatic tube transportation)

5(4)

AUTHORS:

Nesmeyanov, A. N., Khandamirova, N. E. / <sup>(Moscow)</sup> SOV/74-28-2-1/5

TITLE:

Influence of the Langmuir Coefficient and the Molecular Vapor Composition on the Results of Vapor Pressure Measurement (Vliyanie koeffitsiyenta Langmyura i molekulyarnogo sostava para na rezul'taty izmereniya davleniya para)

PERIODICAL:

Uspekhi khimii, 1959, Vol 28, Nr 2, pp 117-132 (USSR)

ABSTRACT:

In the present survey the authors tried to generalize data on the nature of the Langmuir coefficient and on its influence on the results during the vapor pressure measurement according to the rate of sublimation. Besides, the most important methods for determination of this coefficient and the vapor composition were indicated by the authors. The factors mentioned are in numerous cases of decisive importance to obtaining accurate results. In Soviet publications these problems have not been investigated in recent time. The most frequently used methods for determination of the rate of sublimation are the methods devised by Langmuir (Refs 8,9,10) and Knudsen (Refs 11,12,13). In recent time the method of isotope exchange has been introduced for application. The Langmuir method is based on

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Influence of the Langmuir Coefficient and the  
Molecular Vapor Composition on the Results of  
Vapor Pressure Measurement

SOV/74-28-2-1/5

the determination of the rate of evaporation (sublimation)  
of the substance from the open surface into vacuum. It can  
be calculated according to the formula adjoining:

$G = p \sqrt{\frac{M}{2\pi RT}}$  (3), where  $G$  denotes the quantity of the  
evaporated substance per unit of time and per  $\text{cm}^2$  surface  
under heating up to  $T^\circ$ . If conditions occur which complicate  
the condensation of particles on the surface to the effect  
that they transform into vapor again, the coefficient  $\alpha$  is  
substituted into the formula (3)

$G = \alpha p \sqrt{\frac{M}{2\pi RT}}$  (4). The coefficient determines the ratio between  
the number of the particles condensed on the surface and those  
hitting it

$\alpha = \frac{v_3}{v_2}$  (8). The coefficient  $\alpha$  may also be expressed by the  
following formula (Ref 5):

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Influence of the Langmuir Coefficient and the  
Molecular Vapor Composition on the Results of  
Vapor Pressure Measurement

SOV/74-28-2-1/5

$$\alpha = \frac{Q_v}{Q_i} e^{-E/RT} \quad (9), \text{ where } Q_v \text{ denotes the function of the}$$

energy state of an intermediate layer in sublimation,  $Q_i$  is the function of the energy state of the condensed phase, and  $e$  is the activation energy in sublimation. Substances the coefficient  $\alpha$  of which possesses a little value are characterized by a number of specific properties. These refer to the presence of an energy barrier and the necessity of an additional activation energy during sublimation. The influence of the surface relief, of the purity of the surface, of the difference between the molecular composition of vapor and that of the condensed phase on the sublimation rate is finally dependant on the difference between the number of particles hitting the surface and the number of particles which are condensed on the surface during equilibrium. The coefficient  $\alpha$  given in formula (4) is marked as the Langmuir coefficient. In publications only indirect methods for determination of

Card 3/5

Influence of the Langmuir Coefficient and the  
Molecular Vapor Composition on the Results of  
Vapor Pressure Measurement

SOV/74-28-2-1/5

this coefficient are described several of which are indicated in this paper. The coefficient can be computed according to data given for vapor pressure by Langmuir's and Knudsen's methods in accordance with the formula adjoining:

$$\alpha = \frac{p_L^S - p_K^S K}{p_K S} \quad (11), \text{ where } p_L \text{ denotes the pressure of}$$

saturated vapor, measured according to Langmuir's method,  $p_K$  is the pressure of saturated vapor, measured according to Knudsen's method,  $K$  is the Clausius coefficient and  $S$  denotes the evaporating surface. The coefficient can be calculated according to the measurement results of sublimation rate and by means of direct determination of pressure of saturated vapor (Ref 24). The period of equilibrium stabilization between vapor and condensed phase may also serve for its determination. The transition of a substance from the solid or liquid state into the gaseous state may take place in various ways (Ref 43):  
1) by simple evaporation thus causing formation of molecules

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Influence of the Langmuir Coefficient and the  
Molecular Vapor Composition on the Results of  
Vapor Pressure Measurement

SOV/74-28-2-1/5

in the gas phase which correspond to the composition of the condensed phase; 2) by evaporation whereby a gas phase containing polymeric (mainly dimeric) molecules is obtained; 3) by evaporation accompanied by dissociation of molecules or redistribution of valences in them. The most frequently method is the one indicated in point 2. Furthermore, methods for investigation of the gas phase composition are described: 1) measurements of velocity of motion of molecules; 2) measurements of the deviation of the molecular bundle in the magnetic field; 3) magnetic resonance; 4) spectroscopic method; 5) mass-spectroscopic method; 6) torsion variation of the effusion method; 7) determination of vapor density; 8) dynamic method. In conclusion it may be stated that, at present, there are no reliable data on the composition of vapors available, since the results obtained for the same substances by various methods vary considerably. There are 7 figures and 103 references, 16 of which are Soviet.

Card 5/5

5(2)

SOV/78-4-10-3/40

AUTHORS:

Khandamirova, N. E., Yevseyev, A. M., Pozharskaya, G. V.,  
Borisov, Ye. A., Nesmeyanov, An. N., Gerasimov, Ya. I.

TITLE:

Pressure of Saturated Vapor of Beryllium Fluoride

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 10,  
pp 2192-2195 (USSR)

ABSTRACT:

Beryllium fluoride was produced according to the method of A. V. Novoselova from beryllium sulfate. The vapor pressure was measured by means of effusion in vacuum and determination of the weight lost during the experiment (Method 1) or by analysis of the resultant condensate (Method 2). The effusion chamber in method 1 was made of tantalum (Fig 1) and was heated by a "Mars"-electric furnace with a power of 1200 w, the temperature was checked thermoelectrically by means of the PPTN-1 potentiometer. In method 2 the effusion chamber consisted of molybdenum. The condensate was analyzed with the colorimetric photometer of the FEK-52 type by using the reagent "Berillon-11 IRYeA". Both methods gave values in good agreement which are given in table 1. By means of the values obtained and of the data found by the Institut goryuchikh iskopayemykh

Card 1/2

SOV/78-4-10-3/40

Pressure of Saturated Vapor of Beryllium Fluoride

Akademii nauk SSSR (Institute of Combustible Minerals of the Academy of Sciences, USSR) for the thermodynamic potentials of the gaseous and solid beryllium fluoride the heat of sublimation was calculated to be  $55.2 \pm 0.6$  kcal/mole at  $0^\circ\text{K}$ , which is also given in table 1. Table 2 compares this value with the data obtained by K. A. Sene et al (Ref 1) and the value computed on the basis of the 3rd law of thermodynamics. There are 2 figures, 2 tables, and 1 reference.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 20, 1958

Card 2/2

S.4700

2209, 1018 113 60

84309

S/189/60/000/004/005/006  
B002/B060

AUTHORS: Nesmeyanov, An. N., Khandamirova, N. E.

TITLE: The Relationship Between the Sublimation Heat of Elements  
and Their Position in the Periodic System

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 2, khimiya, 1960,  
No. 4, pp. 28 - 32

TEXT: The present paper lists the standard sublimation heats  $H_{298}^{\circ K}$  of chemical elements. The values were, for the most part, taken from Honig's paper (Ref. 4), and, in part, from Ref. 6. As may be seen from the diagram of Fig. 1, the sublimation heat likewise depends on the position in the periodic system. If instead of  $H_{298}^{\circ K}$  the function  $\frac{H_{298}^{\circ K} - A}{r}$  is considered (r being the interatomic distance in the crystal lattice, and A the atomic weight), a linear dependence on the atomic weight within the groups (Fig. 2) is obtained. The groups Cu, Ag, Au, as well as Zn, Cd, Hg,

Card 1/2

KIDANJIAN, G. Z.

37643. K voprosu o primeneni tiodifenilamina na risovykh plantatsiyakh i na vodoyemakh, zaselennykh gambuziyami. Trudy In-ta malyarii i med. parazitologii (M-vo zdravookhraneniya Arm. SSR), vyp. 4, 1949, S. 132-34.

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949



KHANDANYAN, G.Z.; MANUCHARYAN, R.A.

Effect of copper sulfate on gambusias and measures for preventing their mass destruction during the extermination of mollusks. Izv. AN Arm.SSR.Biol.i sel'khoz.nauki 7 no.4:81-85 Ap '54. (MLRA 9;8)

1. Institut malyarii i meditsinskoy parazitologii Ministerstva zdravookhraneniya Arm. SSR.

(ARARAT REGION--GAMBUSIA) (COPPER SULFATE)

ACC NR: AP5025766

SOURCE CODE: UR/0286/65/000/018/0154/0154

AUTHORS: Trifel', M. S.; Khandarova, A. G.; Mekhzandarova, S. A.; Shtern, Ye. P.

ORG: none

TITLE: Method for protecting parts of hydromachinery, for example, blades of ship propellers or hydroturbine wheels, from corrosion-cavitation damage. Class 48, No. 164181

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 154

TOPIC TAGS: hydromachinery, corrosion protection, cavitation damage, corrosion damage, MARINE EQUIPMENT, MARINE ENGINEERING

ABSTRACT: This Author Certificate presents a method for protecting parts of hydromachinery, e.g., blades of ship propellers or hydroturbine wheels, from corrosion-cavitation damage by protective painting or cathodic polarization. To increase corrosion-cavitation resistance, protection is provided by simultaneous use of cathodic polarization from a constant voltage source and by protective painting of steel parts with zinc paint, for example.

SUB CODE: 13/ SUBM DATE: 02Nov63

jw

Card 1/1

UDC: 620.197.5/.6

KHANDEL'SMAN, Yu.M.; DOKUCHALOVA, V.V.; MIKHAYLYUK, A.S.

Measuring minor moments of starting. Izv.tekh. no.2:17-19

F '62.

(MIRA 15:2)

(Measuring instruments)

DOKUCHALOVA, V.V.; USKOVA, S.G.; KHANDEL'SMAN, Yu.M.

Cylindrical stone mounting with a low moment of starting.  
Priborostroenie no.2:15-18 F '63. (MIRA 16'5)  
(Instruments)

L 4934-66 EWT(m)/EWP(w)/EPF(c)/T/EWP(t)/EWP(b)/ETC(m) JD/VW/DJ/G3  
 ACC NR: AT5022676 SOURCE CODE: UR/0000/65/000/000/0228/0232  
 AUTHORS: Khandel'sman, Yu. M.; Fuks, G. I. 44 35  
 ORG: Scientific Committee on Friction and Lubrication, AN SSSR (Nauchnyy sovet po treniyu i smazkam AN SSSR) 44 B+1 11.44  
 TITLE: Means for decreasing friction torque in miniature sleeve bearings 17  
 SOURCE: AN SSSR. Nauchnyy sovet po treniyu i smazkam. Teoriya treniya i iznosa (Theory of friction and wear). Moscow, Izd-vo Nauka, 1965, 228-232  
 TOPIC TAGS: instrument bearing, instrument pivot, bearing friction, precision bearing 18  
 ABSTRACT: Methods for decreasing the friction torque in precision bearings (instrument pivots, etc) by decreasing the shaft diameter or by improving the frictional properties of the pivot materials were investigated. Based on work by N. I. Kol'chin (Mekhanika mashin, t. II M.-L., Mashgiz, 1963) and I. V. Kragel'skiy (O dvuchlennom zakone treniya. Dokl. AN SSSR, 1960, t. 140, No. 5), the friction torque can be expressed as  $M_{ts} = M_0 + K_{ts} P$  11

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L 4934-66  
ACC NR: AT5022676

2

(where  $K$  = constant,  $r_{ts}$  = pivot radius,  $P$  = load). This relationship was experimentally verified by measuring pivot torques (0.3-1.0 mm diameter pivots) according to the method described by Yu. M. Khandel'sman, V. V. Dokuchalova, and A. S. Mikhaylyuk (Izmereniye malykh momentov trovaniya. Izmeritel'naya tekhnika, 1962, No. 2). Thus, friction torque can be decreased by decreasing the pivot diameter and by providing overload supports which protect the pivots (0.08-0.15 mm diameter shafts have been used with overload capabilities to 10 000 grams). The coefficient of friction is known to be proportional to the contact area and increases with decreasing clearance. After decreasing the pivot length (to decrease contact area), it is advisable to provide a curved contact area which helps to keep liquid lubricants in the contact area. Since the friction coefficient does not necessarily decrease with improved surface finish (A. S. Akhmatov<sup>44</sup> Molekulyarnaya fizika granichnogo treniya. Fizmatgiz, 1963) one should determine the optimum finish rather than specify the finest finish which can be provided. A survey of lubrication methods has been presented previously (G. I. Fuks and L. V. Timofeyeva. Kachestvo i primeneniye pribornykh masel i smazok. TsBII, 1959). The work has resulted in the development of bearings with friction torques on the order of 0.001 gm·cm and centering accuracy of 0.002 mm. Orig. art. has: 1 table, 4 figures, and 4 formulas.

Card 2/3

L 4934-66

ACC NR: AT5022676

SUB CODE: IE, MT/

SUBM DATE: 18May65/

ORIG REF: 007

BC

Card 3/3

KHARIN, Ya.I.

Changes in electret polarity. Fiz. tver tela 5 no.9:2517-2525  
S '63. (MIRA 16:10)

1. Leningradskiy elektrotekhnicheskiy institut im. V.I.Ul'yanova  
(Lenina).



KHANDIN, N. I. ✓

Journal of the Iron and Steel Institute  
Vol. 176 Part 3  
Mar. 1954  
Foundry Practice

② met

Equipment for Automatically Knocking out Moulding Boxes.  
N. I. Khandin. (Litsinoe Proizvodstvo, 1953, (1), 14-16).  
[In Russian]. Methods developed at the Stalin motor-car  
factory for automatically knocking out moulding boxes are  
described.—S. K.

KOTIK, Mikhail Grigor'yevich; inzh.; KHANDIN, V.Ye., red.; TUMARKINA,  
N.A., tekhn.red.

[English-Russian aerohydrodynamic dictionary] Anglo-russkii  
slovar' po aerogidrodinamike. Moskva, Glav.red.inostr.nauchno-  
tekhn.slovari Fizmatgiz, 1960. 457 p.

(MIRA 14:2)

(Aerodynamics--Dictionaries)

(English language--Dictionaries--Russian language)

(Hydrodynamics--Dictionaries)

KOTIK, Mikhail Grigor'yevich, inzh.; MURASHKEVICH, Anatoliy  
Mikhaylovich, inzh.; BUKHATINA, Mariya Ivanovna, inzh.;  
TSEYTLINA, TSitsiliya Izrailevna, inzh.; KHANDIN, V.Ye.,  
red.

[English-Russian aviation dictionary] Anglo-russkii  
aviatsionnyi slovar. Moskva, Izd-vo "Sovetskaya entsiklo-  
pediya," 1964. 687 p. (MIRA 17:7)

SOFLANO, Tat'yana Alekseyevna; LEBEDEV, A.P., doktor geol.-min.nauk, red.;  
KHAIN, V.Ye., doktor geol.-min.nauk, red.; KHANDIN, V.Ye., red.;  
KRYUCHKOVA, V.N., tekhn.red.

[Russian-English geological dictionary] Russko-angliiskii geologicheskii slovar'. Pod red. A.P.Lebedeva i V.E.Khaina. Moskva, Glav.red.inostr.nauchno-tekhn.slovari Fizmatgiza, 1960. 559 p.  
(MIRA 14:3)

(Geology--Dictionaries)

(Russian language--Dictionaries--English language)

CHERNUKHIN, A.Ye., inzh., red.; ASHKENAZI, E.L., red.; YEFREMOVA, M.K., red.; IVANOV, N.F., red.; KRASNOBRODSKAYA, L.L., red.; MOSHENTSEVA, I.I., red.; KHANDIN, V.Ye., red.; BEL'CHUK, V.I., mladshiy red.; KOMAROVA, Ye.B., mladshiy red.; SMIRNOVA, N.V., mladshiy red.; KIMYROVA, I.I., mladshiy red.; BRUDNO, K.F., tekhn. red.; KOLESNIKOVA, A.P., tekhn. red.

[English-Russian technical dictionary]Anglo-russkii politekhnicheskii slovar'. Moskva, Glav. red. inostr. nauchno-tekhn. slovarei Fizmatgiza, 1962. 663 p. (MIRA 15:11)  
(English language--Dictionaries--Russian)  
(Technology--Dictionaries)

FARGALI, A.M.; YEVSTIGNEYEVA, R.P.; KHANDIY, I.N.; PRECBRAZHENSKIY, N.A.

Synthesis of 2,4-dimethyl-3-( $\beta$ -diethylaminoethyl)-5-carbethoxy-  
pyrrole and its derivatives. Zhur. ob. khim. 34 no. 3:893-  
898 Mr '64. (MIRA 17:6)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
M.V. Lomonosova.

KHANDIY, N.I.

112-1-1392

Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957,  
Nr 1, p. 214 (USSR)

AUTHOR: Khandiy, N.I.

TITLE: Automation and Mechanization of Foundry Work at the  
Moscow Automobile Plant Imeni Stalin (Avtomatizatsiya  
i mekhanizatsiya liteynogo proizvodstva na Moskovskom  
avtozavode imeni Stalina)

PERIODICAL: Sbornik: Avtomatizatsiya tekhnol. protsessov v mashinostr.  
Goryachaya obrabotka. Moscow, AN SSSR, 1955, pp.359-370.

ABSTRACT: Bibliographic entry.

Card 1/1

Clinical and histopathological modifications of the nervous system in  
myelomatous disease. Probl.gemat. i perel. krovi 1 no.4:41-43 J1-Ag '56.  
(MIRA 10:1)

1. Iz nevrologicheskogo otdeleniya Tsentral'noy klinicheskoy bol'nitsy  
imeni Semashko (nach. F.L.Leont'yev) Ministerstva putey soobshcheniya  
SSSR.

(MYELOMA, PLASMA CELL, pathology,  
CNS (Rus))

(CENTRAL NERVOUS SYSTEM, in various diseases,  
myeloma, plasma cell (Rus))

ADADUROVA, Ye.V., inzh.; KHANDKAROV, Yu.S.

Using electronic digital computers for the coordination of  
train sheets for parallel running traffic. Vest. TSNII MPS  
20 no.7:47-51 '61. (MIRA 14:12)

(Railroads--Traffic)  
(Electronic digital computers)



KHANDKAROV, Yu.S., inzh.

Use of calculating machines by French railroads. Zhel.dor.transp. 46  
no.11:85 N '64. (MIRA 18:1)

1. Sovetnik Komiteta Organizatsii sotrudnichestva zheleznnykh dorog.

KHANDKAROV, Yuriy Sergeyevich; MEL'NIKOVA, Zh.M., red.

[Computer control of transportation] Avtomaty uprav-  
liaiut transportom. Moskva, Znanie, 1964. 22 p. (Novoe  
v zhizni, nauke, tekhnike. IV Seriia: Tekhnika, no.18)  
(MIRA 17:9)

KHANDKAROV, Yu.S., inzh.

Construction of passenger train traffic sheets by means of  
electronic digital computers. Vest. TSNII MPS 23 no.5:58-61  
'64. (MIRA 17:11)

ACC NR: AP6025391

SOURCE CODE: OR/0000/00/001/001/177/177

AUTHOR: **APPROVED FOR RELEASE: 09/17/2001 v. CIA-RDP86-00513R000721720020-0"**

ORG: All-Union Scientific Research Institute of Chemicals for Plant  
Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh  
sredstv zashchity rasteniy, Moskva)

TITLE: Synthesis of alkyl esters of arylthiocarbamic acid

SOURCE: Zhurnal organicheskoy khimii, v. 2, v. 7, 1966, 1199-1201

TOPIC TAGS: herbicide, thiocarbamic acid ester, *WEED KILLER*, *new*  
*ESTER, CARBAMIC ACID*

ABSTRACT:

Alkyl arylthiocarbamates are of interest as herbicides. The previously  
unreported alkyl arylthiocarbamates (III, VIII, and IX) were obtained at  
room temperature by the reaction of arylamines with alkyl thiochloro-  
formates in the presence of NaOH. The alkyl N-aryl- and alkyl N-aryl-  
N-alkylthiocarbamates (V, VI, X, XI, and XII) were obtained by the re-  
action of arylamines or arylalkylamines, and triethylamine with alkyl  
thiochloroformates in absolute ether at room temperature. Physical

ACC NR: AP6025391

constants and composition of esters are given in the table. Esters  
containing an alkyl group at the N atom are the most active as herbicides. Orig.  
art. has: 1 table, [W.A. 50; CBE No. 10]

SUB CODE: 07/ SUBM DATE: 28Jul65/ ORIG REF: 001/ OTH REF: 003

Card 3/3

VOLKOVA, L.V.; SHVETS, V.I.; KHANDKAROVA, V.S.; RYZHENKOVA, S.F.;  
PREOBRAZHENSKIY, N.A.

Lipides. Part 19: Synthesis of optically active  
D-(—)- $\alpha$ -oleoyl- $\beta$ -linoleoyl-glycerol. Zhur.ob.khim. 33 no.6:  
1848-1851 Je '63. (MIRA 16:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
M.V.Lomonosova.

(Glycerides)

CHRAPPA, I.; KHANDL, I.

Arthrodesis of the talocrural joint in unsatisfactory states  
after ankle fractures. Acta chir. orthop. traum. Cech. 31  
no.4:333-338 Ag '64.

1. Ortopedioka klinika Lekarskej fakulty University Komenskeho  
v Bratislave (prednosta prof. dr. J. Cervenansky).

KITANO DE BIRN, L. M.

20-2-32/50

AUTHORS: Rubin, B. A., and Khandobina, L. M.

TITLE: The Action of Sodium Fluoride Upon the Respiration of Intact Carrots and Carrots Infected With *Phoma Rostrupii* (Deystviye ftoristogo natriya na dykhanie zdorovoy i porashennoy fomozom morkovi)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 2, pp. 277 - 279 (USSR)

ABSTRACT: The increase in the intensity of respiration belongs to the characteristic change of the physiological processes occurring in higher plants under the influence of an infection. In the investigations made by the authors a 2,5 - 3 fold increase as compared to the normal intensity was observed beside an activation of the polyphenoloxidase and the peroxidase (sometimes up to 9 - 11 fold). This increase in intensity shall be considered one of the most marked protective functions of the plant organism. The displacements occurring here are not only quantitative, but they are also connected with a qualitative reconstruction of the process. Therefore the changes in the oxidation-metabolism of the plant cell which are caused by pathogenic microorganism shall be thoroughly studied. The authors studied the problem mentioned in the title in intact carrots and in carrots infected with *Phoma rostrupii*.

Card 1/3

The Action of Sodium Fluoride Upon the Respiration of Intact Carrots and Carrots Infected With *Phoma Rostrupii*

It is known that NaF acts upon the first stage of respiration - glycolysis - by suppressing the oenolase. Phosphorylation reactions are also supposed to be suppressed and the cytochromium system to be influenced. Two species of carrots: Nant's (early) and the Moscow winter carrot were artificially infected with pure culture of the fungus *Phoma rostrupii*. The control carrots were like the infected ones cut in. The introduction of NaF was performed by means of vacuum-infiltration; control roots were infiltrated with water. From tables 1 - 3 may be seen that NaF (table 1) greatly reduces the respiration of intact carrots or completely suppresses. In infected carrots, however, the separation of CO<sub>2</sub> amounted to 1/3 of the control. In order to clear up the qualitative reconstruction of the respiration processes, the influence of NaF on the respiration of the mycelium of *Phoma rostrupii* was investigated. NaF increased oxygen absorption and the separation of CO<sub>2</sub> in younger mycelium, whereas a 30 - 35 days old mycelium showed almost no influence of NaF. In a 70 days old culture the respiration was considerably stimulated. In a longer lasting cultivation on carrot extract *Phoma rostrupii* apparently feels a lack of nutritive substances which form a respiration substratum. This

Card 2/3

KHANDOBINA, L.M.; OZERETSKOVSKAYA, O.L.

Oxidation processes in carrot roots infected with *Phoma*  
*Rostrupii*. Biokhim.pl. i ovoshch. no.5:133-146 '59.  
(MIRA 13:1)

1. Kafedra fiziologii rasteniy Moskovskogo gosudarstvennogo  
universiteta imeni M.V.Lomonosova.  
(Carrots--Diseases and pests)  
(Oxidation, Physiological)



PETROV, A.P., doktor tekhn. nauk, prof.; DUVALYAN, S.V., kand. tekhn. nauk; ABADUROVA, Ye.V., inzh.; ZHURAVLEV, M.M., inzh.; KHANDKA OV, Yu.S., inzh.; SAMARINA, N.A., inzh.; ZAV'YALOV, B.A., kand. tekhn. nauk; BERNGARD, K.A., doktor tekhn. nauk, prof.; VASIL'YEV, G.S., kand. tekhn. nauk; BIKCHENTAY, M.A., inzh.; FROLOV, I.A., inzh.; SIDEL'NIKOV, V.M., inzh.; MOKROUSOVA, N.I., inzh.; POZAMANTIR, E.I., kand. tekhn. nauk; GLUZBERG, E.A., retsenzent; MAKSIMOVICH, B.M., kand. tekhn. nauk, retsenzent; FREDE, V.Yu., inzh., red.

[Use of electronic digital computers in compiling train sheets] Sostavlenie grafika dvizheniya poezdov na elektronnykh tsifrovyykh vychislitel'nykh mashinakh. Moskva, Transzheldorizdat, 1962. 199 p. (MIRA 15:9)

1. Chlen-korrespondent Akademii nauk SSSR (for Petrov).  
(Railroads--Train dispatching)  
(Railroads--Electric equipment)

LEPYAVKO, A.G.; KHANDOGA, T.N.

Psychoses in connection with quinacrine intoxication in the  
treatment of lamblasis. Sov. med. 28 no.6:113-116 Je '65.  
(MIRA 18:8)

1. Kafedra gospiatal'noy terapii (zav.- dotsent A.G. Lepyavko)  
Ternopol'skogo meditsinskogo instituta.

KHANDOGA, T.N.

Eosinophilic pulmonary infiltrate in a lambliosis patient.  
Vrach. delo no.4:15C-151 Ap'63. (MIRA 16:7)

1. Kafedra gospiatal'noy khirurgii (zav.-dotsent A.G.Lepyavko)  
Ternopol'skogo meditsinskogo instituta.  
(GIARDIASIS) (LUNGS—DISEASES) (EOSINOPHILES)

LEPYAVKO, A.G.; TSILYURIK, I.T.; KHANDOGA, T.N.

Effect of lamblasis of bile ducts on the functional state of  
the thyroid gland in endemic goiter. Probl. endok. i gorm.  
11 no.4:25-30 J1-Ag '65. (MIRA 18:11)

1. Kafedra gospiatal'noy terapii (zav.- dotsent A.G. Lepyavko)  
i kurs rentgenologii i radiologii (zav.- dotsent I.T. TSilyurik)  
Ternopol'skogo meditsinskogo instituta.

KHANDOGA, T.P.

Determining the optimum capacity of liquefied gas distribution  
stations. Nift. i' gas.prom. no. 340-63 Ja-Me '65.

(MCRA 18:8)

KHANDOGA, T.P.

The pamphlet "Fuel gases and their utilization in the national economy" by L.M.Zil'bermintse. Reviewed by T.P.Khandoga.  
Gaz.prom. no.8:37-39 Ag '56. (MLRA 10:7)  
(Gas as fuel)

LUNDA A T P.  
KOPYTOV, V.F.; KHANDOGA, T.P.

First session of special working group on gas problems at the  
European Economic Commission of the UNO. Gaz.prom.no.12:39 D'56.  
(MIRA 10:1)

(Europe--Gas manufacture and works)  
(United Nations--Commissions)

KHANDOGA, T.P. (Kiyev)

"Calculation of air conduits" by B.N.Lobaev. Reviewed by T.P.Khandoga. Vod. i san. tekhn. no.1:40-41 Ja '61. (MIRA 14:9)  
(Ventilation)  
(Lobaev, B.N.)



KHANEGBA, T.P.

Determining the optimal quantity for gas-distribution substations.  
Stroil. truboprov. 8 no.12:26-27 D '63. (MIRA 17:4)

1. Glavnoye upravleniye gazovogo khozyaystva Ministerstva  
kommunal'nogo khozyaystva UkrSSR, Kiyev.

SNEGUR, N. (pos. Novogornyy, Chelyabinskaya obl.); MAYTAMA, I. (Komsomol'sk-na-Amure); ZADOROZHNIY, N. (Kurgan); LUK'YANOV, N.; TISHKIN, V. (Orlovskaya obl.); STEPIN, A.; KHANDOGIN, A.; LAPAYEV, Ye. (Volzhsk); OKULOVSKIY, A.; MANEROV, V.

Readers' letters. Pozh.delo 9 no.3:30 Mr '63.  
(Fire prevention)

(MIRA 16:4)

KHANDOGIY, D.G.

Struggle for the protection of young animals. Veterinariia 39  
no.12:22-24 D '62. (MIRA 16:6)

1. Glavnyy veterinarnyy vrach Cherkasskogo rayona, Cherkasskoy  
oblasti.

(Cherkassy District--Veterinary medicine)

*Khandomirova, N.E.*

81971

S/076/60/034/07/03/009  
B015/B070

5.4210

AUTHORS: Nesmeyanov, An. N., Khandomirova, N. E., Vilenskiy, V. D.,  
Birin, Ye. A., Borisov, Ye. A.

TITLE: Effect of Oxide Films on the Rate of Vaporization

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 7,  
pp. 1425-1429

TEXT: The effect of oxide films on the rate of vaporization of metallic zinc, cadmium, lead, and beryllium was investigated by the method of isotopic exchange (Ref. 7) and the integral variant of Knudsen's method (Ref. 8). For the isotopic exchange method  $Zn^{65}$ ,  $Cd^{113}$ , and RaD were used as indicators. For the Knudsen's method a ФЭК-52 (FEK-52) colorimeter and the reagent "berillon II WPEA (IRYeA)" were used. The colorimetric determination of lead was carried out in the laboratoriya geokhimii geologicheskogo fakul'teta MGU (Laboratory of Geochemistry of the Department of Geology of MSU). The values obtained are given in Tables 1-3. The results of the experiments show that the method of isotopic exchange can be

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Effect of Oxide Films on the Rate of Vaporization S/076/60/034/07/03/009  
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used for the study of the mechanism of vaporization and the determination of the vaporization coefficients. A dependence of the rate of vaporization and Langmuir coefficient  $\alpha$  on the degree of oxidation is found. The rate of vaporization depends on the mechanical treatment of the metal surface and the residual pressure in the instrument. At temperatures between 410 and 545°C solid solutions of lead oxides with varying composition  $Pb_xO_y$  are formed on the surface. The oxide films on the metal surface may lead either to a decrease (Zn, Cd, Be) or an increase (Pb) of the measured values of the vapor pressure. There are 3 tables and 14 references: 4 Soviet, 5 American, 2 German, 1 British, and 1 French.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: September 6, 1958

Card 2/2

CONCHAROV, N., mayor; MOZNYAKOV, N., mayor; KHANDOV, G., starshiy leytenant;  
YAKOVLEV, A., leytenant

An important and inspiring subject. Komm.Vooruzh.sil 2 no.7:80-83  
Ap '62. (MIRA 15:3)

1. Chleny vneshtatnogo soveta po politicheskim zanyatiyam pri otdele  
propagandy zhurnala "Kommunist Vooruzhennykh sil."  
(Russia--Armed forces--Political activity)

KHANDOV, Z.A., doktor tekhn.nauk, prof.; ABRAMOVICH, V.A., inzh.

Increasing the power and improving the economic characteristics of  
diesels through evaporative cooling by water injection. Trudy  
LIVT no.70:5-16 '64. (MIRA 18:10)

KHANDOV, Z. A.

32675. Issledovaniye rabochoyego protsesssa sudovogo gazovogo dvigatelya. Trudy tsentr. Nauch.-issled. In-ta rech. Flota, vyp. 2, 1949, s. 55-104

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

KHANDOV, Z.

A

N/5  
743.422  
.K4

Sudovyye Gazosilovyye Ustanovki (Marine Gas Power-plants, by) Z. A.  
Khandov i A. b. Genin. Leningrad, Rechizdat, 1951.  
372 p. Diagr., Tables.  
"Literatura": p. 370.  
AB 520226



KHANDOV, Z.A., kand.tekhn.nauk,dots.

Mean value of the polytropic compression index in gas engines.  
Trudy LIIVT no.20:134-141 '53 (MIRA 12:1)  
(Gas and oil engines)

TRINKLER, Gustav Vasil'yevich, professor, doktor tekhnicheskikh nauk;  
KHANDOV, Z.A., redaktor; SANDLER, N.V., redaktor; VOLCHOK, K.M.,  
redaktor.

[Engine building for a half century; outline by a contemporary]  
Dvigatelistroenie za polustoletie; ocherki sovremennika. Lenin-  
grad, Gos. izd-vo vodnogo transporta, 1954. 158 p. (MLRA 8:1)  
(Engines)

Name: KHANDOV, Zosima Aleksandrovich  
Dissertation: Study of the work process of marine  
gas engines  
Degree: Doc Tech Sci  
Affiliation: [not indicated]  
Defense Date, Place: 2 Dec 55, Council of Leningrad Inst  
of Engineers of Water Transport  
Certification Date: 7 Sep 57  
Source: BMV 22/57

TRINKLER, Gustav Vasil'yevich [deceased]; KHANDOV, Z.A., red.; VOLCHOK,  
APPROVED FOR RELEASE: 09/17/2001 — CIA-RDP86-00513R000721720020-0"

[Engine manufacture in the last half century; outline by a  
contemporary] Dvigatelistroenie za polustoletie; ocherki  
sovremennika. Izd. 2. Leningrad, Izd-vo "Tekhnol transport,"  
Leningr. otd-nie, 1958. 166 p. (MIRA 11:8)  
(Marine engines)

KHANDOV, Zosima Aleksandrovich; AKIMOV, P.P., red.; VOLCHOK, K.M., tekhn.  
red.

[Marine internal combustion engines; construction and design]  
Sudovye dvigateli vnutrennego sgoraniia; Konstruktsii i raschety.  
Leningrad, Izd-vo "Rechnoi transport," Leningr. otd-nie, 1958.  
240 p. (MIRA 11:7)

(Marine engines)